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SPEAKING OF APES: LANGUAGE EXPERIMENTS AND COMMUNICATION AMONG OUR CLOSEST RELATIVES

What would other animals tell us about themselves if only they could speak? What could a close relative such as the chimpanzee tell us about ourselves and our history? Like Dr. Doolittle, researchers have long dreamed of communicating with other species. Over the past years, numerous experiments have shown that a capacity for symbolic language is not necessarily the sole preserve of Homo sapiens, and that it may indeed be possible to have meaningful communication across species boundaries.

It has become increasingly clear to anthropologists in the past decade, that although there are dramatic differences between the overall behavior and lifeways of humans

and the great apes, many of the characteristics once thought to be unique to humankind are being discovered, albeit in a very limited form, in the behavioral repertoires of the chimpanzee, gorilla, and orangutan.

For instance, it used to be thought that only humans used tools. Then Jane Goodall at the Gombe Stream Reserve in Tanzania electrified the world with the news that chimpanzees also used rudimentary tools in the wild, to fish for termites and to sponge up water. Others have observed chimpanzees elsewhere using rocks as hammers and anvils to crack open palm nuts. Some anthropologists countered that only man actually made tools, but, once again, chimpanzees were found to prepare their termiting sticks with considerable care



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and foresight. One captive orangutan was even taught to chip stone tools. Clearly, no other animal species depends on tools for survival to the extent that the human species does (and has done probably for millions of years), but it is nonetheless true that at least our closest relatives are capable of tool-using and tool-making behavior that foreshadows that of human beings.

In the same way, it now appears that the ability to think about and refer to things in the abstract, or by means of symbols, may be due in part to a common substrate of intelligence that we share with the chimpanzee, gorilla, and orangutan. Although it is not yet clear whether any of the great apes make use of this capacity in the wild, recent experiments in laboratories and primate colonies have shown that all apes are able to learn symbolic systems of communication modeled after human language. Further, apes can communicate with humans and other apes about objects, persons, places, and activities using these "artificial" languages. For those who believed that language and the ability to communicate about something other than one's immediate emotions were the sole province of human beings, these experiments have provided a fascinating glimpse into the minds of apes and perhaps have given us clues about the communicative potentials of our last common ancestor.

The first attempts in the 1940's to teach chimpanzees how to speak mimicked the way human infants learn language. Baby chimpanzees were raised in human homes, by human caretakers, and were treated as if they were human. One such chimpanzee, Viki, was eventually able to use pictures to ask for objects or activities. On tests of conceptual discrimination she was as accurate as similarly aged human children. But Viki was never able to pronounce more than three words, even after years of training and constant exposure to human

speech. As her surrogate mother summed up the experiment in the 1951 book The Ape in Our House, "We said that if an ape had proper upbringing, it might learn to speak spontaneously. But we were wrong. You can dress an ape in the finest of finery, buy it a tricycle, and kiss it to death--but it will not learn to talk."

Viki's inability to master spoken language was not a training problem, we know now. It has since been demonstrated that in addition to some differences in their vocal tracts, apes simply lack the special brain connections which make human speech possible. In the 1960's, psychologists began to realize that language had to be distinguished from speech when thinking about primate communication abilities. Because human language is expressed through speech, we tend to equate one with the other, but any formal communication system is a language.

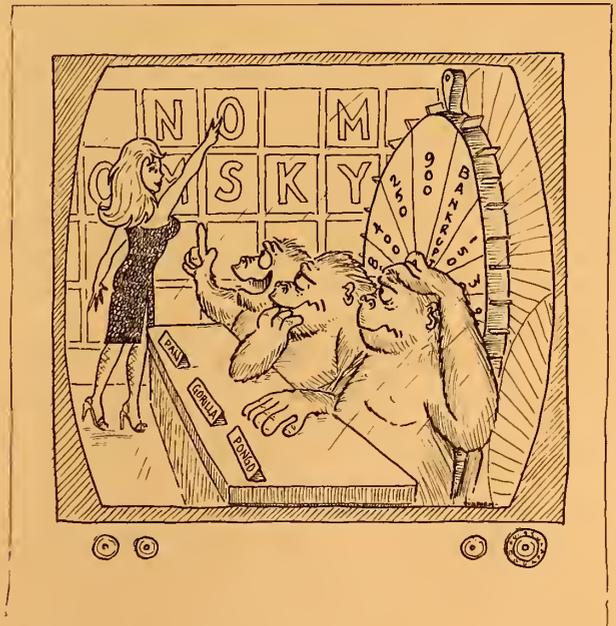
If chimps cannot speak, perhaps they can use a different form of language. As a result of more field work among chimpanzees in their natural habitat, some observers noticed that chimpanzees use hand signals in their natural communications with each other. Suggesting that chimpanzees might be more successful at learning methods of communication that used the chimpanzee's native gestural abilities, the Gardners, working at the University of Nevada in the 1960's, taught their chimp infant, Washoe, to make hand signals in ASL (American Sign Language). The success the Gardners were able to achieve excited anthropologists, psychologists, and linguists everywhere. During her four years of training, Washoe learned 150 signs, signed them in combinations (though never in such a constant order as to resemble a real sense of syntax), and learned some signs that were never taught to her, apparently by imitation and observation alone (such as "smoke"). She also invented some signs on her own and adapted others.

Washoe's success with sign language was not unique. Over the course of the last 15 years, similar experiments have been conducted with other common chimpanzees and with the bonobo (or pygmy chimpanzee), the gorilla, and the orangutan as well. Most of the experiments have focused on sign language, but such studies are difficult to control scientifically, and utterances must be filmed to be preserved. Hoping to avoid these methodological problems, some experimenters devised artificial languages, based on plastic tokens or keyboard symbols, in order to better control and record the animals' actual utterances. Sarah, a common chimpanzee, was taught by David and Ann Premack to manipulate plastic discs of various shapes and colors to name and ask for objects and to make simple sentences. Another chimpanzee, Lana, at the Yerkes Primate Center, was taught "Yerkish," an artificial language using "lexigrams" (or graphic symbols) on a keyboard connected to a computer. This system had the advantage of eliminating the human trainer, and with it, the possibility that humans were unconsciously cuing the animals to make appropriate responses, a criticism which continues to cloud some of the sign language studies' results.

The artificial language systems have also had their own share of critics. With such narrow training, some say, the animals have little opportunity to use language in the important ways in which humans use it, namely to construct a world, to obtain desirables, and to regulate the behavior of others. "Language" it may be, but it is divorced from the open social context that makes language a meaningful phenomenon instead of a trivial game.

Although the sign language experiments are difficult to conduct, maintain, and to verify by objective means, they still provide us with the most compelling evidence of the apes'

symbolic capacity for language. Because of these studies' relative openness, they also document the trained animals' ability to use symbolic communication in innovative and productive ways, such as to convey spontaneous or novel thoughts and desires. Koko, a lowland gorilla who was raised from infancy and taught ASL by Dr. Francine Patterson, now has a sign vocabulary of some 500 words and recognizes 500 more. This is the largest vocabulary of any of the signing apes. Most importantly, Koko uses her abilities to joke with, lie to, and insult her human and animal companions, as well as to perform the more mundane vocabulary exercises and comprehension tests, which are administered to obtain objective information about her language skills. Koko has used sign language to protest



to trainers about boring vocabulary drills, to ask for a kitten as a pet (which she got), and to insult her young male gorilla companion Michael ("Michael stupid toilet devil").

To be sure, not all authorities have been willing to accept that the behavior being taught and used is truly "language." Before these studies were first undertaken, it was assumed by many prominent linguists that human language was so distinct and qualitatively different from all other forms of communication that it could not be explained as an evolutionary development from any more primitive communication system. But the language studies showed that ape language did share some of the important components of human communication. Apes could use a symbolic system of arbitrary referents, could generalize (that is, transfer meaning from one context to another appropriate one, as in the use of the word "coke" to mean all sweet dark drinks), and could use signs or symbols to create new words or combinations of words spontaneously in response to unfamiliar objects. As a result, some linguists began to draw ever stricter definitions of what constitutes "real" language and claimed the apes were merely "aping" their trainers and not producing intentional, patterned, or grammatical language at all. One experimenter, Herbert Terrace, who had worked with the chimpanzee Nim, concluded that his experiments showed only that Nim was mimicking his trainers and at best could use signs as simple demands.

Workers who had experience with raising infant apes countered that Nim, in particular, had an unstable environment with so many changes in personnel that his language training may have been compromised. Problems with objectively verifying tests of any ape's language comprehension and usage also occur when the animals are bored, or when the tester is a stranger to the animal. Motivation and emotional state

contribute to ape testing performance just as they do to that of human children.

Fortunately, the researchers at The Yerkes Center have found ways around these various methodological impasses. The latest results of the work of Sue Savage-Rumbaugh and her colleagues are the most impressive yet. Dr. Savage-Rumbaugh worked for many years training two common chimpanzees, Sherman and Austin, to use Yerkish. Their training was considered successful, but nonetheless the two common chimpanzees required intensive conditioning to first acquire symbols and then to progress from a simple stage of symbol association to the more abstract representational use of symbols. In sum, although common chimpanzees clearly can deal with symbolic usage on a conceptual level, they still do not learn language in the same way, at the same pace, or with anywhere near the same facility as do human children, even with the kind of intensive conditioning that children never undergo.

More recently, the Yerkes group has worked with the bonobo, or pygmy chimpanzee, a little-known ape that until recently was considered to be merely a smaller version of the common chimp. Startling behavioral differences between the two closely-related species have been found, both in field studies and in laboratory colonies, and the bonobo's language abilities are remarkably advanced in comparison to those of the common chimpanzee. Kanzi, a young male being raised by his mother, showed spontaneous use of the Yerkish keyboard and recognition of symbols, without any training or conditioning behavior. His sole experience with language came by observing his mother, who was actively trained during his infancy. When it became clear that Kanzi was able to

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TEACHER'S CORNER: ARCHEOLOGY IN THE CLASSROOM

Archeologists often try to interpret the material remains that they find in terms of the activities carried out by ancient people. But not all activities generate material remains, nor are all activities carried out in separate locations. Some spaces may be used for many purposes, while others are reserved for a more limited range of activities. Finally, the debris from activities is not always thrown away on the spot; in fact, we devote a lot of effort to training our children NOT to throw things away on the spot. Trash cans are a monument to something, namely the dump, which could only develop once people lived in one place for a long enough time to be bothered by garbage. Often the most concentrated archeological remains in an area really represent the dump.

The following two exercises are designed to demonstrate what can be learned from material remains at an archeological site.

COMPARATIVE GARBAGE EXERCISE (grades 4-12)

Purpose: To explore the relationship between material remains and activities in different areas.

Equipment: One or two days of trash and garbage from at least two wastebaskets located in different areas of a school or home, for example: the student lounge and the teachers' lounge, the lunchroom and the classroom, the living room and the bathroom. Do not tell the class where the bags came from. Also recommended, 3 or more pairs of rubber gloves and one large plastic drop cloth for each trash bag.

A. Procedure: Divide into as many groups as there are trash bags. Spread the drop cloths on the floor and dump out the trash. Each group should analyze the trash in the following terms:



1. Number of different kinds of trash; for example, vegetable remains, animal remains, paper food containers, plastic food containers, metal food containers, beverage containers (group or individual sized?) papers with writing, papers with printing, pencils, cardboard tubes, etc.

2. Apparent functional groupings of trash; for example, remains of meals, remains of snacks, remains of drinks, remains of work, remains of games, debris from cosmetic activities, discarded printed matter, etc.

3. Proportional representation of each functional group. Is most of the trash food? Or is most of it reading material?

B. Analyze the information from each trash bag.

1. What does it represent in terms of activities? Does it represent more

than one activity? Which activities were most frequently represented? Do you think all the activities were carried out near the trash can or in a different space? If debris from an activity was transported to the trash can, was it all transported or was some left on the activity site or disposed of in another way?

2. Does the trash reflect group activities or individual activities? Was the context of activity the family or the society? If the society, what is the importance of these activities to the society at large?

3. The group could also interview the actual users of the space asking what they did in a particular area to show how physical remains give a different picture from oral history, i.e. What did you do while you were there? What did you eat or drink?

C. Now compare the results of two or more bags.

Where did each bag come from? If the class has problems with this, you could provide a list of choices (i.e. who used the space--teachers, students, 7th graders, children, parents,--how did they use it?).

SANDBOX ACTIVITY: CREATING AND DIGGING
AN ARCHEOLOGICAL SITE (grades K - 8)

Divide a sandbox into four or more squares, each big enough for two or three students to work in. Use string secured by thumbtacks or weights to mark the divisions.

Before the students arrive, bury a few items suggestive of a particular room or area in each square. Examples: bones, fruit pits, measuring spoons, food package wrap, broken china fragments, etc. (kitchen); fragments of toys, Legos, stuffed animal eyes, game pieces (children's play area); pens,

pencils, old T.V. or stereo knobs, picture frames, paper clips, etc. (living room, den or study); toothpaste tube cap, empty shampoo bottle, removable rod from toilet roll holder, soapdish, etc. (bathroom); assorted screws, old screwdriver, hammer head, carpenter's rule, etc. (garage or workbench area); clothespins, measuring cup, miscellaneous buttons (sewing area or laundry); old doorknob, keys, umbrella handle (front hall).

Hand students archeologist's tools (trowel, small shovel, screen) and assign them to squares. Each square team has a plastic bag for "finds."

After about 20 minutes, depending on age of students, each team has to guess which room of the house they have excavated and tell what clues led them to their answer. Older students could be asked to guess how many people lived in the house, the ages of the occupants, and something about the kind of life they led, for example kinds of foods eaten and home entertainment.

Alison S. Brooks



JAPANESE CULTURAL EXCHANGE: THE TEACHER— ANTHROPOLOGIST'S ROLE

Editor's Note:

International cultural exchanges are becoming an increasingly common part of the secondary school experience. American schools are opening their doors to foreign visitors, and American students and teachers are visiting their counterparts abroad. For many students these exchanges are their first experience of another culture, and students as young as eleven are travelling abroad as part of a formal exchange program. The teacher trained in anthropology can play an important role in making the exchange an easier and more meaningful educational experience for him or herself, other teachers, or students. The following articles describe the role of the teacher-anthropologist in two cultural exchanges with Japan, one an exchange of high school students, the other of teachers.

Anthro.Notes editor JoAnne Lanouette is an English teacher at the Sidwell Friends School in Washington, D.C. and has a master's degree in anthropology. This summer, she led a group of four high school students on a month-long visit with Japanese host families and high-school students. As an anthropologist, she was able to develop a program on very short notice to prepare the students in advance for what they would experience. Once in Japan, she saw her role as a cultural "broker" or mediator, and her ability to perceive cultural differences both eased the students' fears and anxieties and helped them avoid behavior offensive to their hosts.

Bonny Cochran, a social studies teacher at Bethesda-Chevy Chase High School in Montgomery County, Maryland was a participant in the year-long

George Washington University/Smithsonian Institution Anthropology for Teachers program in 1979-80. Last year Bonny participated in a five-year old teacher exchange program between Kanagawa Prefecture near Tokyo and the state of Maryland. She spent the entire school year as a teacher of American Culture and English language in Japanese schools. In an interview with Anthro.Notes editor Ann Kaupp, Bonny describes her experiences and discusses how her training in anthropology helped her to understand and adapt to Japanese culture.

ANTHROPOLOGY SMOOTHS THE WAY TO JAPAN

Two years ago the Japan-U.S. Culture Center in Washington, D.C. began sponsoring a summer visit to Japan for four Sidwell Friends High School students and one teacher. The month-long stay entailed, in part, living with a host family, becoming a student for a week at Mitaka High School in Toyko, visiting preparatory schools, exploring the cities of Kyoto and Nara, attending a conference on war and peace with Yokohama high school students, and, most poignantly, touring Hiroshima with a survivor of the tragic bombing.

How did my knowledge of anthropology from graduate study and teaching help me on this journey? Despite only two months' notice, preparation to cushion culture shock and aid rapport proved to be critical. We arranged for 10 hours of language training, and I looked for linguistic differences and insights into the Japanese culture. Certainly honorifics suggested a society more concerned with age and status than the U.S. "Hai," the Japanese word for "yes," means "I understand you," but not necessarily "I agree with you." Anthropology taught me the importance of not only using another culture's language as much as possible but also using their polite phrases--a critical social lubricant. Therefore, the students and I said

"itadakimasu" before meals and "gochi so sama deshta" at the end of the meal. To be polite we would not say thank you with just "domo" or "domo arigato" but instead "domo arigato gozaimasu." (Roman script renditions of the Japanese script.) We bowed and did not attempt to shake hands, our custom.

Through reading we learned not only the rudiments of the language but also some of the culture of Japan. These books were especially helpful: Japan: A Survival Kit by Ian McGueen (Lonely Plant Publications, P.O. Box 88, So. Yarra, Victoria, Australia, 1986); The Japanese by Edwin O. Reischauer (Charles E. Tuttle Co., 1977) and Japan's High Schools by anthropologist Thomas P. Rohlen (University of California Press, 1983). I also read again the classic ethnography, The Chrysthamum and the Sword by Ruth Benedict. Although much of her book is outdated, some essential truths remain.

In addition to books, we consulted other organizations that had conducted similar trips. The Japanese Association of the Experiment in International Living and the Japan American Student Conference (1981) gave us invaluable advice. For example, we learned that the correct way to drink is to fill the glasses for other people first, and the correct way to take a bath is to soap and rinse on a stool inside the tub before immersing your spotlessly clean body into the tub of very hot water. Some of the complex rules of gift giving were explained and we were advised to avoid giving anything associated with the numbers four and nine: the Japanese word for four is a homonym for death; nine is a homonym for hardship.

Reading could not supplant the useful advice we gained from last year's students, the first to go on this program. They told us about sleeping on a futon, slurping noodles (a very polite sound), living without privacy, being the center of attention,

contending with restricted space, coping with constant curiosity and generous kindness, and going to public baths.

My study of anthropology led me to ask the students and myself to keep a journal. This proved an invaluable record of our changing impressions, our varying degrees of culture shock, and our knowledge of the new culture. I also gave the students six guiding questions to consider as we observed and participated in events ranging from sushi meals, kendo (martial art) training, Buddhist services, tea ceremonies, and kabuki theater. 1) How is Japanese culture different from American culture? 2) When something seems strange to you, ask yourself: How might that make sense from a Japanese point of view? 3) How do the various parts of the culture considered in the first question integrate or support each other? 4) What parts of the culture create friction with each other? 5) What diversity in attitudes or behavior exists? and 6) What is the function of various activities?

Once we landed in Tokyo my anthropological training proved invaluable. First, it made me highly receptive. I relished seeing similarities and differences, and I was eager to enjoy the differences, whether it meant slipping in and out of slippers at the entrance to houses and schools, sitting on pillows, squatting to urinate, sleeping on pillows filled with beans, or eating almost everything with chopsticks. I never was inclined to ask why can't they live the American way?

Second, anthropology helped me to answer questions. For example, Japanese students and teachers at the war and peace conference were puzzled by the American students' behavior. All students were asked to write an essay defining a possible problem and a possible solution. The American students scattered off to think and

write alone--by a tree, on a balcony, in a room, at another table. The Japanese students stayed together in one room. The Japanese were worried that something was very wrong. I could explain that American students would often study alone. The Japanese students explained that even if they wanted to study alone they would worry that they would hurt their friends' feelings and hence they stick together. Another time I was asked: Is it true that American wives and husbands often kiss each other every day? Or, with twelve Buddhist scholars we considered whether a Buddhist would encourage revolution, and whether Buddhism could be adopted by Americans or if the American value on individualism mitigated against such an adoption.

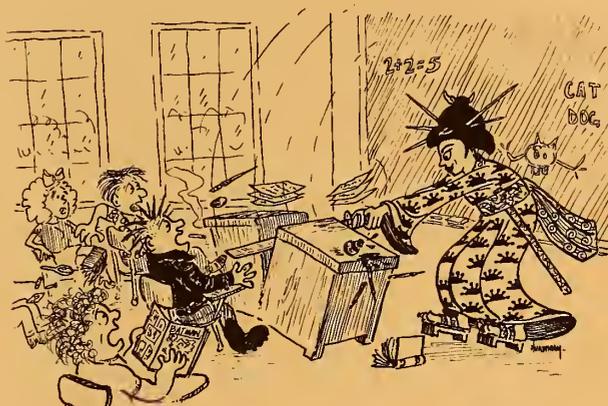
Third, anthropology helped me to be sensitive to possible culture shock on the part of the students. Miso shiru (a soybean based soup), pickled cucumbers, rice, seaweed, and raw fish for breakfast had one student longing for a Dunkin' doughnut after a week. Periodically I would hunt down and find apples, granola, doughnuts, and chocolate to ease the shock.

In many ways, anthropology helped me to be a kind of "cultural broker" for these students. At times they talked and gestured on the subway as if they were back in Washington, D.C. I could provide the perspective that such actions perpetuated the stereotype of the loud, aggressive American. I reminded them that they could still keep their individuality and yet talk softly and walk compactly.

Most of all, anthropology taught me to question and to realize that there are layers and layers of meaning to peel off--like the skins of an onion. In one month, no matter how intense, I would never presume to understand Japanese culture, and yet I hear tourists come home from a short stay with many set opinions. By meeting so many individual Japanese people, I

banished generalizations. Without anthropology, I would have seen Japan far more narrowly and far more superficially.

JoAnne Lanouette



AN AMERICAN TEACHER LOOKS AT JAPANESE HIGH SCHOOLS

Q: How is the Japanese school day organized?

A: The school day starts and ends an hour later than here, and classes are held for a half day on Saturdays. Teachers start their day with a ten minute meeting in the teachers' room. In Japan students, not teachers, have classrooms, so you would never send a student out of the room for misconduct, because the room belongs to the students. Classrooms are not furnished with maps, books, or posters since the

rooms are not designated for a specific subject.

After their meeting, teachers go to their homerooms to take class roll, before their first period class. Teachers teach only three 50-minute classes a day, out of six periods. However, the class schedule varies each day unlike the scheduling in most American schools. In addition, two teachers may split up the teaching of a four-hour-a-week course, each teaching two hours. Since there are only two administrators in the school--a principal and a head teacher--the teachers are responsible for much of the administration as well as for career counseling. Teachers rotate their membership in various committees, which may be concerned with next year's schedule, a school festival, PTA, safety in the building, or a final exam schedule. It was nice not to hear teachers complain about the administration, because the teachers there take part in most of these duties and gain much experience and understanding of these responsibilities.

Q: Is there any room for creative or independent thinking within a cultural system that stresses conformity of behavior?

A: Americans tend to equate conformity with heavy handedness. However, the Japanese love to identify with the group and don't want to appear different. On the other hand, it is almost expected that American students will be spontaneous once in a while.

It is hard for me to say much about this issue, because teaching a foreign language requires imitation and repetition. I encouraged the students to voice their thoughts in practicing conversational English by asking questions that required an individual response. But it was very difficult to get a response. A previous student of mine who was a Japanese exchange

student a couple of years ago told me, "Ms. Cochran, in Japan, students expect teachers to talk; there is no classroom discussion. American teachers sometimes find they have run out of classroom material because they expected classroom discussion. The Japanese students then think these teachers are dumb and unprepared." This was excellent advice, and I followed it, since I didn't want to start out looking dumb. But wow! It was different!

Q: Can you describe some of the extracurricular activities?.

A: Every student is expected to join a club. Unlike in America, in Japan students are expected to put their heart and soul into only one activity. Clubs meet frequently, and students do not compete for membership, even for sports clubs. Some of the clubs are concerned with the traditional arts--koto, tea ceremony, and kendo. Students develop strong loyalties to their fellow club and homeroom members. Here they learn to be part of a group and to cooperate always.

Q: What do students do in their leisure time?

A: I don't think they have any leisure time, since they are at school practically six days a week. They learn to study while commuting one and a half to two hours on the train, which is not uncommon. When I asked them this same question they said they call up friends, listen to music, watch television, and, right before the exams, they cram. It is against the rules for Japanese high school students to hold part-time jobs. Some, however, do break this rule.

Q: How do the students prepare for college?

A: Japan is a nation of people that like to organize. There are schools called juku, which students may attend

after school. Juku gives students extra help to prepare for the university entrance exams. Students even take entrance exams for junior and senior high school. Teachers take their role very seriously in helping their students to gain entrance to the universities and to find jobs. Senior homeroom teachers do not rest until each student is settled for the following year in a university or in a job. Teachers will even design a study plan to assist a student who has failed the entrance exam and needs to retest the following year. Entrance into a school is based almost completely on the exam. A high school's reputation, as far as I can figure out, is based on how well its students did on the college entrance exams, how many were accepted into college, and on the reputation of those colleges.

Q: What are popular career choices for Japanese high school students?

A: Many young women go on to college but expect to get married and quit working when they become mothers. The career aspirations of Japanese male high school students are similar to those of their American counterparts. They are interested in becoming lawyers, doctors, computer specialists, teachers, and rock stars.

Q: What are Japanese students' perceptions of America?

A: Some common questions are: "Does everyone really drive to school?" "Do students come to school in yellow school buses?" The Japanese schools do not have school dances, and so the perception is that American students attend many dances and have a great time. They also believe that in many cases high schools are a bit dangerous and students are not well disciplined--probably based on what they see on television. I showed them my school yearbook and they were surprised at many things, such as our schools offering driver education. In

Japan you have to be 18 to get a license, and you may have to attend a school many miles away from your home. They also wanted to know if there were any Japanese students in America, and, if so, why?

Q: Can you compare some of the strengths and weaknesses of the Japanese and American school systems?

A: I appreciated the tremendous feeling of cooperation among the faculty and between the faculty and the administration. I think a lot of things are comparable such as the concern and care for the students. In Japan, however, it is not considered the teacher's fault if the student doesn't learn. Students are expected to work independently and are responsible for mastering the content of the lessons. And students were always well prepared; I never heard "I don't have a pencil."

What I found difficult getting used to were the large classes; there were always 45 students in a class compared to 32 students at my school. It was also hard to get used to the lecture style teaching that results in little teacher-student interaction.

Q: How would you say Japanese students are different from American students?

A: Japanese teachers would often ask me that question, and I would say, "American students will think. They may not have a fact to think about, but when the teacher comes into the room and says three things, there are 30 students asking a question and saying 'What if....'" Japanese students will master all the content but think no more about it. I require my students to read a variety of sources offering varying viewpoints, and then I encourage them to reach their own conclusions.

Q: How did you promote discussion in your classes?

A: The Japanese place much emphasis on self introduction; they like to know who you are, something about your family, and where you come from. So my first lesson in class was always a self introduction. I would say, "I want to introduce myself to you. But let's make it like a conversation. Since you are Japanese and you are shy, I know there are things you would like to ask but you won't, so let's practice asking them in English." Afterwards, I would go around the room asking students questions about themselves.

Q: Did you get any feedback from your students about their reaction to being taught by an American teacher?

A: I think they found me very impatient and very hard to understand at first. Japanese students are very eager to please, and I think at first they didn't know how they could please me. Therefore, I slowed down, and I would make jokes to set them at ease. Some of their anonymous comments were: "You have been a very kind teacher." "You helped me in many ways, and now I am not so nervous when I see a foreigner." We are used to seeing foreigners, but Japan is a very homogeneous society. We Americans like to think we are comprehensible; the Japanese like to think they are unique. When Americans meet people, they try to find commonalities but the Japanese often focus on what is different. So a lot of my lessons were broad cultural experiences. I did a little dialogue on American bathing customs. Students wanted to know if it was true we use soap in the bath tub and that the toilet and bath tub are in the same room.

Q: What were the questions frequently asked by your Japanese colleagues?

A: Most frequently asked was, "How much do American teachers get paid?" It may

look as if American teachers receive higher salaries, but what is not stated is the Japanese bonus system. Twice a year, in June and December, teachers receive a bonus, which is equivalent to about five and a half months' salary, so our pay is very comparable. They were also curious about how, and if, we get paid during the summer months when many of us do not teach. They were shocked when I told them we teach five out of six periods a day, whereas I was appalled that they had to teach such large classes. They also give less work, usually just a mid-term and final.

Q: Do you think that your Japanese experience will help you in any way become a better teacher?

A: Oh, yes! I think I'll appreciate things about American students and American education that I took for granted before. I like feisty students, and I like them to say "So what!" I like to hear them question the material and engage in an active classroom discussion.

Q: Did your knowledge of anthropology help you in Japan?

A: Emphatically yes! One of the things it did was lead me to Ruth Benedict's The Chrysanthemum and the Sword. Even though the book is out-of-date, I found it useful in understanding some aspects of the Japanese culture, such as their strong sense of obligation and duty. Feeling very much an outsider in Japan, it was nice to take refuge in assuming an anthropological perspective rather than concentrating on my loneliness. I think my knowledge of anthropology enabled me to arrive more quickly at an acceptance and understanding of some Japanese attitudes I thought very strange. For instance, an explanation would often begin with "We Japanese always," a statement implying cultural uniformity and cohesion. I, in turn, would explain that Americans might approach a similar matter in a

variety of ways. Anthropology is a field that promotes understanding and tolerance, which is a good reason why our children should have the opportunity to study it.

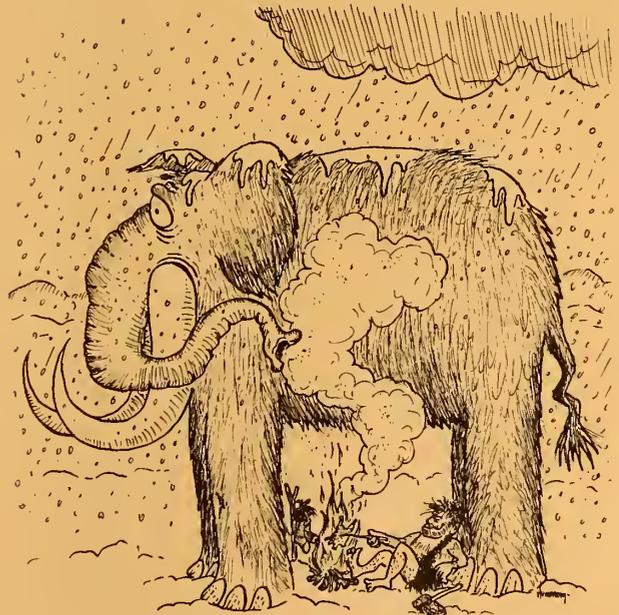
Q: What are you going to tell your students when you return to school?

A: That Japanese students seldom miss class. I realize what a burden student absences are on teachers. I'll tell my

students about the general atmosphere in Japanese schools--quiet, clean, no smoking on campus, no smoking in the bathrooms. In Japan it's the students' responsibility to keep their school clean. Every day students keep the classrooms swept and periodically there is a major cleanup of the library, halls, and gym. But I will also tell them how much I love them because they "look alive" and are eager to engage in our classroom discussions.

WINDOWS ON AYLÄ'S WORLD AT THE AMNH

A new exhibit, Dark Caves, Bright Visions: Life in the Ice-Age Europe," at the American Museum of Natural History in New York celebrates the world of the late Ice-Age hunters of Europe (35,000 to 12,000 years ago) whose achievements were as revolutionary as those of the much later inventors of agriculture and cities. In addition to the tools and by-products of everyday life, the exhibit includes several hundred delicate and beautifully detailed original carvings and engravings of animals and humans, many on loan for the first time from museums here and in Europe. The centerpiece of the show is a life-size reconstruction of a spectacular dwelling made entirely of mammoth bones, tusks and hide found at Mezhirich in the Ukraine, about 100 miles southeast of Kiev. This was the physical setting for many of the fictitious scenes in Jean Auel's The Mammoth Hunters. A visual sense of the rich diversity and symbolic life of the first physically modern Europeans is enhanced by the accompanying music of a bone flute from 30,000 years ago. An excellent catalogue by Randall White, which could also serve as a text for students, is available from the museum for \$35 (hard cover) and \$18.95 (paperback). The exhibit will be on view until January 18.



(continued from p.4)

learn the Yerkish lexigrams independently, the research project was altered so that Kanzi would never be trained in the same manner as previous study subjects. Instead, he was given full access to the keyboard, both inside the laboratory and outside as he roamed the 55 acre enclosure. Kanzi requests all food, activities, and personal contact with his human and ape companions by means of the keyboard. Because of this research design, the criticism of past studies, that the apparent linguistic behavior is only a conditioned response, has been avoided.

Kanzi's language use differs from that of Austin's and Sherman's. Unlike them, Kanzi will name objects he does not want immediately, so his responses are not reward-dependent. He frequently uses gestures and vocalizations in conjunction with lexigrams, and his gestures are more controlled and precise. Most fascinating is the fact that Kanzi understands spoken English. Although it seemed that Austin and Sherman did also, it was not until their English comprehension was tested (in the absence of the usual contextual and gestural cues) that their performance on identification tests dropped to slightly better than chance. Using lexigrams improved their scores once more to almost 100%. Kanzi's performance shows no drop with the switch to English, and in fact he seems to use the spoken English as an additional cue to the meaning of lexigrams. More recent studies of Kanzi's younger sister Mulika indicate that Kanzi's abilities are not unique, leading Savage-Rumbaugh to conclude that the bonobo has some innate language abilities not shared with the common chimp, abilities that seem more like those of humans.

What do these results tell us about how animals communicate naturally among themselves? Very little is known about how wild chimpanzees communicate with

each other, or about the complexity of their messages. These studies would seem to indicate that chimpanzees very likely use several types of cues simultaneously, such as vocalizations, gestures, and eye contact. No study in the wild has yet documented the range of chimpanzee's natural communications, but that may simply be a question of the human observers knowing what to look for.

Some surprising results have been obtained from studies of monkey calls. Recording both vocalizations and behavior of wild vervet monkeys, Robert Seyfarth and Dorothy Cheney have shown that these monkeys have different alarm calls for each of their four major predators and different vocalizations for different types of social interactions. The calls seem to be a simple kind of representational signaling. Interestingly, while some of these calls are acoustically distinguishable to the human ear, others are not. If wild monkeys are capable of such unsuspected behavior, it seems likely that apes may also be able to communicate some types of information to each other, some of which we may not be able to hear.

Do these experiments provide any clues about how language might have begun in the human past? From these studies, and from observations of human infants, it seems clear that the ability to conceptualize and to hear complex vocalized messages can exist before the ability to produce actual speech is present. The ape experiments also show that once started, language use and learning can continue, even without further human training. For instance, Washoe, now living in a colony with other signing apes, has learned a few signals from her companions. They have also invented or modified signs on their own. Washoe has even taught signs to her adopted son Loulis, who continues to pick up additional vocabulary by imitating the other apes. Roger Fouts, the

researcher in charge of the colony, reports that Jane Goodall has remarked upon the low levels of aggression among the signing chimps, compared to chimps in other situations. This is an especially telling observation, since one of the theories about why language evolved in humans suggests that language became necessary to regulate social behavior. Whatever its origin, language, even among apes, may be an important diffuser of the tensions of group living. These experiments make it seem likely that the ability to symbolize might well have been present in the last ancestor we share with all the living great apes (that is, by about 11 to 12 million years ago). It is now possible to see human language not as a trait without a past, unique to human beings, but rather as one extreme development of primitive communicative abilities and potentials shared with our nearest relatives, the great apes.

For further reading:

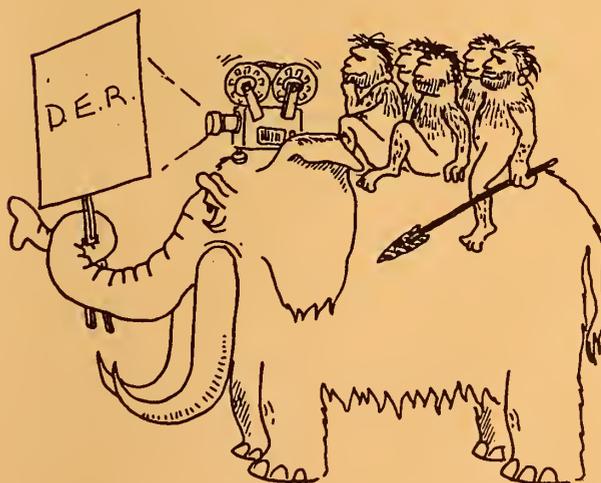
Linden, Eugene. Apes, Men and Language. Penguin, 1976. (A survey of the sign language studies with apes.)

Patterson, F. G. The Education of Koko. Holt, Rinehart, and Winston, 1981. (Describes the training of Koko the gorilla and the controversies about language experiments.)

Savage-Rumbaugh, E. Sue. Ape Language: From Conditional Response to Symbol. Columbia University Press, 1986. (A somewhat technical but complete account of the work of the Yerkes Primate Center.)

SOCIAL STUDIES VIDEOCASSETTE UNITS
PLANNED: TEACHERS' HELP REQUESTED

Documentary Educational Resources of Massachusetts, a subordinate of D.E.R., a small non-profit company that produces and distributes documentary films and videotapes in social studies, has received an Incentive Award from the Massachusetts Council for the Arts and Humanities to repackage segments of its 16mm films into videocassette units. The topics and content to be included in these videocassette units will be based on the curriculum needs of teachers from the elementary through the senior high school levels. D.E.R. is now calling for course outlines from social studies teachers and would like to hear from teachers and administrators who are willing to work with them throughout the project. Those interested in participating, send syllabi to: Judith Nierenberg, D.E.R. of Massachusetts, 5 Bridge St., Watertown, MA 02171; or call (617) 926-0491.



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